Amendments to the Specification:

Page 4, lines 9 to page 5, line 1, please replace the paragraph with the following amended paragraph:

At present, the scintillation process has been well accepted and used in many applications. The basic mechanism is also reasonably well understood. It is generally accepted that the basic scintillation process involves three steps: (1) the absorption of the incident high energy radiation and the conversion into a large number of low energy (a few multiples of the band gap energy) electrons and hole pairs; (2) transfer the electron-hole recombination energy to the luminescence centers before its loss to ~~multi-photon~~multi phonon relaxation processes; and, (3) the radiative emission of the transferred energy. In other word, the scintillation efficiency (E) can be expressed as:

$E = \beta \times S \times Q$

where β is the conversion efficiency, S is the transfer efficiency and Q is quantum efficiency of the radiation centers. Despite the understanding of scintillating mechanism based on the known materials, there is still lack of any good model which has the capability to predict the scintillating behavior of a specific compound. The quantum efficiency of an emission center can be predicted and tested optically; however, neither the total number of electron-hole pairs generated by an incident gamma ray radiation nor the transfer efficiency can be predicted or independently tested. In the end, the only way to confirm the scintillating behavior of a compound is to make and then test it.